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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/703,792	11/02/2000	Shinji Hayakawa	KAT-232	2171

23995 7590 04/10/2007	EXAMINER	
RABIN & Berdo, PC	HO, CHUONG T	
1101 14TH STREET, NW		
SUITE 500	ART UNIT	PAPER NUMBER
WASHINGTON, DC 20005	2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

Office Action Summary	Application No.	Applicant(s)
	09/703,792	HAYAKAWA ET AL.
	Examiner	Art Unit
	CHUONG T. HO	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 December 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>3-6 and 9-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>3-6 and 9-20</u> is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>01/08/07</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

1.   The amendment filed 12/29/06 have been entered and made of record.

2.   Applicant's arguments with respect to claims 3, 4-6, 9-14, 15-20 have been

considered but are moot in view of the new ground(s) of rejection.

3.   Claims 3, 4-6, 9-14, 15-20 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Platel et

al. (4,607,363) in view of Weir, deceased et al. (4,707,831), and in further view of Malek

et al. (6,253,207 B1).

As to claim 3, Platel et al. disclose all the following subject matter : a packet receiver

connected to a network for receiving communication packets sent from a packet

transmitter and containing coded speech data via said networky decoding said

communication packets, and outputting decoded speech data, said packet receiver

comprising:

- a packet memory circuit for temporarily storing received packets including the

  communication packets in a first-in first- out fashion to thereby form a queue; (fig.

  4, part 10);

- a read start threshold setting circuit for setting, with respect to a length of the

  queue, a read start threshold at which the received packets should begin to be

read out; (fig. 4, part 12 - counter for counting the number of packets to be read

out; col. 8, lines 26-35 - the read start threshold is zero, applicant fails to disclose

that the threshold could not be set at zero);

- a read comparing circuit for determining whether or not the length of the queue
  has reached said read start threshold, and outputting a read command signal in
  accordance with a result of a decision; and (fig. 4, part 18 - compares queue
  length with current size of queue, which results in either a read or a flush; col. 8,
  lines 57-68);

- a read control circuit for causing, in response to said read command signal, the
  received packets to be read out of said packet memory circuit. (fig. 4, part 36;
  col. 8, lines 62-66 - otherwise the packets are sent to the modem; col. 5, line 2).

However, Platel et al. is silent to disclosing a packet monitoring for monitoring the

communication packets being sequentially received via the network and discarding,

when any one of said communication packets exceeds a preselected allowable delay

and/or is received in a inverse sequence, the one packet and/or feeding a preselecting

error packet to said packet memory circuit.

Weir, deceased et al. disclose a packet monitoring for monitoring the

communication packets being sequentially received via the network and discarding,

when any one of said communication packets exceeds a preselected allowable delay

and/or is received in a inverse sequence, the one packet and/or feeding a preselecting

error packet to said packet memory circuit (see col. 3, lines 28-35, any speed packet

whose delay exceeded the standard delay is discard); the received packets to be read

out of said packet memory circuit, wherein by using a delay of the network and cause

receipt time of the communication packet to vary (col. 3, lines 31-34, this will often mean

holding a speech packet in a buffer for the difference between the actual delay and the

standard delay).

Both Platel and Weir disclose monitoring the communication packets. Weir,

deceased et al. recoginizes a packet monitoring for monitoring the communication

packets being sequentially received via the network and discarding, when any one of

said communication packets exceeds a preselected allowable delay and/or is received

in a inverse sequence, the one packet and/or feeding a preselecting error packet to said

packet memory circuit. Thus, it would have been obvious to one of ordinary skill in the

art at the time of the invention to modify the system of Platel with the teaching of Weir to

monitor the communication packets being sequentially received via the network and

discarding, when any one of said communication packets exceeds a preselected

allowable dealy and/or is received in a inverse sequence, the one packet and/or feeding

a preselecting error packet to said packet memory circuit in order to improve the quality

of speech packets.

However, the combined system (Platel – Weir) are silent to disclosing said read

start point setting circuit sets the read start threshold at a length of the queue that is

three time to four time as great as said standard deviation.

Malek et al. disclose read start point setting circuit sets the read start threshold at

a length of the queue that is time as great as said standard deviation (see figure 7, col.

7, lines 15-25, typical probability density function of inter-stream cell delay (jitter) is

shown in FIG. 7. The shape of the probability density function depends on the characteristics of the multimedia traffic, the spatial correlation among the monomedia streams, <u>buffer</u> size, as well as the capacities allocated to each monomedia stream. In the illustration of FIG. 7, case 3 produces the worst <u>jitter since it has the largest standard deviation, and case 2 exhibits the best jitter</u> distribution. Thus, in order to assign values of capacity, C.sub.n, to each monomedia component under various network conditions, various values of capacities can be analyzed and the combination providing the smallest standard deviation can be selected).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation taught by Malek into the combined system (Platel – Weir). One would have been motivated to do so to allow to improve inter-stream synchronization between monomedia streams.

However, the combined system (Platel – Weir – Malek) are silent to disclosing said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation into the combined system (Platel – Weir –Malek). One have been motivated to do so to measure the jitter before the idle buffer state occurs.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Platel et al. (4,607,363) in view of Weir, deceased et al. (4,707,831), and in further view

of Malek et al. (6,253,207 B1).

As to claim 3, Platel et al. disclose all the following subject matter : a packet receiver

connected to a network for receiving communication packets sent from a packet

transmitter and containing coded speech data via said networky decoding said

communication packets, and outputting decoded speech data, said packet receiver

comprising:

- a packet memory circuit for temporarily storing received packets including the

  communication packets in a first-in first- out fashion to thereby form a queue; (fig.

  4, part 10);

- a read start threshold setting circuit for setting, with respect to a length of the

  queue, a read start threshold at which the received packets should begin to be

  read out; (fig. 4, part 12 - counter for counting the number of packets to be read

  out; col. 8, lines 26-35 - the read start threshold is zero, applicant fails to disclose

  that the threshold could not be set at zero);

- a read comparing circuit for determining whether or not the length of the queue

  has reached said read start threshold, and outputting a read command signal in

  accordance with a result of a decision; and (fig. 4, part 18 - compares queue

  length with current size of queue, which results in either a read or a flush; col. 8,

  lines 57-68);

- a read control circuit for causing, in response to said read command signal, the

  received packets to be read out of said packet memory circuit. (fig. 4, part 36;

  col. 8, lines 62-66 - otherwise the packets are sent to the modem; col. 5, line 2).

However, Platel et al. is silent to disclosing a packet monitoring for monitoring the

communication packets being sequentially received via the network and discarding,

when any one of said communication packets exceeds a preselected allowable delay

and/or is received in a inverse sequence, the one packet and/or feeding a preselecting

error packet to said packet memory circuit.

Weir, deceased et al. disclose a packet monitoring for monitoring the

communication packets being sequentially received via the network and discarding,

when any one of said communication packets exceeds a preselected allowable delay

and/or is received in a inverse sequence, the one packet and/or feeding a preselecting

error packet to said packet memory circuit (see col. 3, lines 28-35, any speed packet

whose delay exceeded the standard delay is discard); the received packets to be read

out of said packet memory circuit, wherein by using a delay of the network and cause

receipt time of the communication packet to vary (col. 3, lines 31-34, this will often mean

holding a speech packet in a buffer for the difference between the actual delay and the standard delay).

Both Platel and Weir disclose monitoring the communication packets. Weir, deceased et al. recoginizes a packet monitoring for monitoring the communication packets being sequentially received via the network and discarding, when any one of said communication packets exceeds a preselected allowable delay and/or is received in a inverse sequence, the one packet and/or feeding a preselecting error packet to said packet memory circuit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Platel with the teaching of Weir to monitor the communication packets being sequentially received via the network and discarding, when any one of said communication packets exceeds a preselected allowable dealy and/or is received in a inverse sequence, the one packet and/or feeding a preselecting error packet to said packet memory circuit in order to improve the quality of speech packets.

However, the combined system (Platel – Weir) are silent to disclosing said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation.

Malek et al. disclose read start point setting circuit sets the read start threshold at a length of the queue that is time as great as said standard deviation (see figure 7, col. 7, lines 15-25, typical probability density function of inter-stream cell delay (jitter) is shown in FIG. 7. The shape of the probability density function depends on the characteristics of the multimedia traffic, the spatial correlation among the monomedia

streams, <u>buffer</u> size, as well as the capacities allocated to each monomedia stream. In the illustration of FIG. 7, case 3 produces the worst <u>jitter since it has the largest standard deviation, and case 2 exhibits the best jitter</u> distribution. Thus, in order to assign values of capacity, C.sub.n, to each monomedia component under various network conditions, various values of capacities can be analyzed and the combination providing the smallest standard deviation can be selected).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation taught by Malek into the combined system (Platel – Weir). One would have been motivated to do so to allow to improve inter-stream synchronization between monomedia streams.

However, the combined system (Platel – Weir – Malek) are silent to disclosing said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate said read start point setting circuit sets the read start threshold at a length of the queue that is three time to four time as great as said standard deviation into the combined system (Platel – Weir –Malek). One have been motivated to do so to measure the jitter before the idle buffer state occurs.

6.   As to claim 10, Platel discloses a switching decision circuit for generating, when the length of the queue exceeds said discard start threshold, a signal to said read

control circuit for reading the packet designated out of said packet memory circuit as the

candidate, a switch for selecting the discard processing or the decode processing in

accordance with said switching signal; and a discarding circuit for executing the discard

processing to thereby discard the received packet input via said switch; said switching

decision circuit causing said switch to continuously select the discard processing up to

said discharge end threshold set on the queue ((fig. 4, part 12 - counter for counting the

number of packets to be read out; col. 8, lines 26-35 - the read start threshold is zero,

applicant fails to disclose that the threshold could not be set at zero); (fig. 4, part 18 -

compares queue length with current size of queue, which results in either a read or a

flush; col. 8, lines 57-68); (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets are

sent to the modem; col. 5, line 2).

However, Platel is silent to disclosing estimating the influence of said packet on

sound quality, and generating a switching signal for selecting either one of discard

processing and decode processing.

Fujimoto et al. disclose estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing (figure 4, col. 9, lines 65-67, In this embodiment, the same word is

pronounced more than once and the corresponding voice is input more than once.

Thus, there are produced a plurality of voice power signals which are averaged, for

example by superposition, to define an average voice power signal, which, in turn, is

stored in the reference pattern memory 17 if the conditions at units 15 and/or 16 are

satisfied. In the embodiment of FIG. 4, if the voice power signal has been found to have

no power dip or <u>voiceless interval near the end thereof, then this incomplete voice</u>

<u>power pattern is discarded</u> by the pattern check unit 16').

Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to incorporate estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing taught by Fujimoto into the combined system (Platel – Weir –

Harrision). One would have been to motivated to do so to allow to store reference data

at high accuracy.

7.   As to claim 11, Platel discloses a switching decision circuit for generating, when

the length of the queue exceeds said discard start threshold, a signal to said read

control circuit for reading the packet designated out of said packet memory circuit as the

candidate, a switch for selecting the discard processing or the decode processing in

accordance with said switching signal; and a discarding circuit for executing the discard

processing to thereby discard the received packet input via said switch; said switching

decision circuit causing said switch to continuously select the discard processing up to

said discharge end threshold set on the queue ((fig. 4, part 12 - counter for counting the

number of packets to be read out; col. 8, lines 26-35 - the read start threshold is zero,

applicant fails to disclose that the threshold could not be set at zero); (fig. 4, part 18 -

compares queue length with current size of queue, which results in either a read or a

flush; col. 8, lines 57-68); (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets are

sent to the modem; col. 5, line 2).

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example by superposition, to define an average voice power signal, which, in turn, is

stored in the reference pattern memory 17 if the conditions at units 15 and/or 16 are

satisfied. In the embodiment of FIG. 4, if the voice power signal has been found to have

no power dip or voiceless interval near the end thereof, then this incomplete voice

power pattern is discarded by the pattern check unit 16').

Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to incorporate estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing taught by Fujimoto into the combined system (Platel – Weir –

Harrision). One would have been to motivated to do so to allow to store reference data

at high accuracy.

8.   As to claim 12, Harrison discloses read start threshold, said discard start

threshold and said discard end threshold are identical with each other (col. 10, lines 62-

67, start discard, stop discard start threshold, During interval 8, some significant

perturbation of the network causes a rapid increase in average forwarding delay in this

queue to above <u>threshold</u> level 2 associated with critical congestion. The QoS process

now suspends forwarding of filler traffic out of the queue and <u>starts to discard</u> new

incoming packet flows that would normally flow into this queue. This leads to a reduction

in average forwarding delay. The interface may remain congested, but the process

<u>stops discarding</u> packets (interval 9). Finally, in interval 10, the interface is no longer

congested (average forwarding delay has fallen below <u>threshold</u> level 1) and the

process begins to promote filler traffic again to the respective queue).

9.   As to claim 13, Platel et al. discloses a packet monitoring circuit for monitoring

communication packets being sequentially received via the network and discarding,

when any one of said communication packets exceeds a preselected allowable delay

and / or is received in inverse sequence, the one packet and / or feeding a preselected

error packet to said packet memory circuit fig. 4, part 12 - counter for counting the

number of packets to be read out; col. 8, lines 26-35 - the read start threshold is zero,

applicant fails to disclose that the threshold could not be set at zero); (fig. 4, part 18 -

compares queue length with current size of queue, which results in either a read or a

flush; col. 8, lines 57-68); (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets are

sent to the modem; col. 5, line 2).

10.   As to claim 14, Platel et al. discloses a time-out monitoring circuit for setting a

particular receipt limit time representative of the preselected allowable delay to each

communication packet, and determining whether or not each communication packet

arrived before said receipt limit time assigned there expires; a sequence monitoring

circuit for monitoring a sequence of receipt of the communication packets on the basis

of information contained in said communication packets; a discarding circuit for

monitoring the communication packets and discarding any one of said communication

packets that has arrived after the receipt limit time assigned to thereto; and an error

compensating circuit for feeding, when any one of the communication packets is discard

or received in an inverse sequence, the error packet to said packet memory circuit fig.

4, part 12 - counter for counting the number of packets to be read out; col. 8, lines 26-35

- the read start threshold is zero, applicant fails to disclose that the threshold could not

be set at zero); (fig. 4, part 18 - compares queue length with current size of queue,

which results in either a read or a flush; col. 8, lines 57-68); (fig. 4, part 36; col. 8, lines

62-66 - otherwise the packets are sent to the modem; col. 5, line 2).

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Platel et al. (4,607,363) in view of Weir, deceased et al. (4,707,831) in further view of

Harrison et al. (6,091,709), and in further view of Fujimoto et al. (4,769,844).

As to claim 4, 5, Platel et al. disclose all the following subject matter : a packet receiver

connected to a network for receiving communication packets sent from a packet

transmitter and containing coded speech data via said network decoding said

communication packets, and outputting decoded speech data, said packet receiver

comprising:

A first step of setting, before temporarily storing received packets including the

communication packets to thereby form a queue; a second step of temporarily storing

the received packets to thereby form a queue (fig. 4, part 10);

A third step of comparing the queue with said read start threshold and outputting, in

accordance with a result of a comparison, a read command signal for reading out the

received packets (fig. 4, part 18 - compares queue length with current size of queue,

which results in either a read or a flush; col. 8, lines 57-68); (fig. 4, part 12 - counter for

counting the number of packets to be read out; col. 8, lines 26-35 - the read start

threshold is zero, applicant fails to disclose that the threshold could not be set at zero);

a read comparing circuit for determining whether or not the length of the queue has

reached said read start threshold, and outputting a read command signal in accordance

with a result of a decision; and (fig. 4, part 18 - compares queue length with current size

of queue, which results in either a read or a flush; col. 8, lines 57-68);

a fourth step of reading out the received packets in response to said read command

signal and either one of a read request signal requesting the received packet to be

decoded and a discard candidate read command signal output when the queue reaches

said discard start threshold (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets

are sent to the modem; col. 5, line 2).

However, Platel et al. is silent to disclosing a fifth step of selecting either one of

discarding and decoding of the received packets read out; a sixth step of discarding,

when the discarding is selected, at least one of the received packets from a head of the

queue while determining whether of not the length of the queue has reached said

discard end threshold.

Weir, deceased et al. disclose a fifth step of selecting either one of discarding

and decoding of the received packets read out; a sixth step of discarding, when the

discarding is selected, at least one of the received packets from a head of the queue

while determining whether of not the length of the queue has reached said discard end

threshold (see col. 3, lines 28-35, any speed packet whose delay exceeded the

standard delay is discard).

Both Platel and Weir disclose monitoring the communication packets. Weir, deceased et

al. recoginizesa fifth step of selecting either one of discarding and decoding of the

received packets read out; a sixth step of discarding, when the discarding is selected, at

least one of the received packets from a head of the queue while determining whether

of not the length of the queue has reached said discard end threshold. Thus, it would

have been obvious to one of ordinary skill in the art at the time of the invention to modify

the system of Platel with the teaching of Weir to provide a fifth step of selecting either

one of discarding and decoding of the received packets read out; a sixth step of

discarding, when the discarding is selected, at least one of the received packets from a

head of the queue while determining whether of not the length of the queue has

reached said discard end threshold in order to improve the quality of speech packets.

However, the combined system (Platel and Weir) are silent to disclosing a read

start threshold at which said received packets should being to be read out, a discard

start threshold at which said received packets should begin to be discarded, and a

discard end threshold at which said received packets should end to be discarded with

respect to a length of said queue.

Harrison et al. disclose a read start threshold at which said received packets

should being to be read out, a discard start threshold at which said received packets

should begin to be discarded, and a discard end threshold at which said received

packets should end to be discarded with respect to a length of said queue (col. 10, lines

62-67, start discard, stop discard start threshold, During interval 8, some significant

perturbation of the network causes a rapid increase in average forwarding delay in this

queue to above threshold level 2 associated with critical congestion. The QoS process

now suspends forwarding of filler traffic out of the queue and starts to discard new

incoming packet flows that would normally flow into this queue. This leads to a reduction

in average forwarding delay. The interface may remain congested, but the process

stops discarding packets (interval 9). Finally, in interval 10, the interface is no longer

congested (average forwarding delay has fallen below threshold level 1) and the

process begins to promote filler traffic again to the respective queue).

Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to incorporate a read start threshold at which said received packets should

being to be read out, a discard start threshold at which said received packets should

begin to be discarded, and a discard end threshold at which said received packets

should end to be discarded with respect to a length of said queue taught by Harrison

into the combined system (Platel and Weir). It would have motivate to do so to routinely discard packets from this type of traffic as a management statery.

However, the combined system (Platel – Weir – Harrison) are silent to disclosing a received packet to be read out as a candidate to be discarded, estimating, based on sound / soundless information contained in said packet designated and the queue and / or an influence of said packet on quality of sound to be reproduced in an auditory aspect, and discarding or decoding said packet in accordance with a result of an estimation.

Fujimoto et al. disclose a received packet to be read out as a candidate to be discarded, estimating, based on sound / soundless information contained in said packet designated and the queue and / or an influence of said packet on quality of sound to be reproduced in an auditory aspect, and discarding or decoding said packet in accordance with a result of an estimation (figure 4, col. 9, lines 65-67, In this embodiment, the same word is pronounced more than once and the corresponding voice is input more than once. Thus, there are produced a plurality of voice power signals which are averaged, for example by superposition, to define an average voice power signal, which, in turn, is stored in the reference pattern memory 17 if the conditions at units 15 and/or 16 are satisfied. In the embodiment of FIG. 4, if the voice power signal has been found to have no power dip or voiceless interval near the end thereof, then this incomplete voice power pattern is discarded by the pattern check unit 16').

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a received packet to be read out as a candidate to be

discarded, estimating, based on sound / soundless information contained in said packet

designated and the queue and / or an influence of said packet on quality of sound to be

reproduced in an auditory aspect, and discarding or decoding said packet in accordance

with a result of an estimation taught by Fujimoto into the combined system (Platel –

Weir – Harrision). One would have been to motivated to do so to allow to store

reference data at high accuracy.

13.   As to claim 5, Platel discloses a switching decision circuit for generating, when

the length of the queue exceeds said discard start threshold, a signal to said read

control circuit for reading the packet designated out of said packet memory circuit as the

candidate, a switch for selecting the discard processing or the decode processing in

accordance with said switching signal; and a discarding circuit for executing the discard

processing to thereby discard the received packet input via said switch; said switching

decision circuit causing said switch to continuously select the discard processing up to

said discharge end threshold set on the queue ((fig. 4, part 12 - counter for counting the

number of packets to be read out; col. 8, lines 26-35 - the read start threshold is zero,

applicant fails to disclose that the threshold could not be set at zero); (fig. 4, part 18 -

compares queue length with current size of queue, which results in either a read or a

flush; col. 8, lines 57-68); (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets are

sent to the modem; col. 5, line 2).

However, Platel is silent to disclosing estimating the influence of said packet on

sound quality, and generating a switching signal for selecting either one of discard

processing and decode processing.

Fujimoto et al. disclose estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing (figure 4, col. 9, lines 65-67, In this embodiment, the same word is

pronounced more than once and the corresponding voice is input more than once.

Thus, there are produced a plurality of voice power signals which are averaged, for

example by superposition, to define an average voice power signal, which, in turn, is

stored in the reference pattern memory 17 if the conditions at units 15 and/or 16 are

satisfied. In the embodiment of FIG. 4, if the voice power signal has been found to have

no power dip or voiceless interval near the end thereof, then this incomplete voice

power pattern is discarded by the pattern check unit 16').

Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to incorporate estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing taught by Fujimoto into the combined system (Platel – Weir –

Harrision). One would have been to motivated to do so to allow to store reference data

at high accuracy.

14.   As to claim 6, Harrison discloses read start threshold, said discard start threshold

and said discard end threshold are identical with each other (col. 10, lines 62-67, start

discard, stop discard start threshold, During interval 8, some significant perturbation of

the network causes a rapid increase in average forwarding delay in this queue to above

threshold level 2 associated with critical congestion. The QoS process now suspends

forwarding of filler traffic out of the queue and starts to discard new incoming packet

flows that would normally flow into this queue. This leads to a reduction in average

forwarding delay. The interface may remain congested, but the process <u>stops</u>

<u>discarding</u> packets (interval 9). Finally, in interval 10, the interface is no longer

congested (average forwarding delay has fallen below <u>threshold</u> level 1) and the

process begins to promote filler traffic again to the respective queue).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

15.   Claims 15, 16, 18-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Platel et al. (U.S.Patent No. 4,607,363) in view of Weir, deceased et

al. (U.S.Patent No. 4,707,831), and in further view of Harrison et al. (6,091,709).

In the claim 15, Platel et al. disclose all the following subject matter : a packet receiver

connected to a network for receiving communication packets sent from a packet

transmitter and containing coded speech data via said network decoding said

communication packets, and outputting decoded speech data, said packet receiver

comprising:

A first step of setting, before temporarily storing received packets including the

communication packets to thereby form a queue; a second step of temporarily storing

the received packets to thereby form a queue (fig. 4, part 10);

A third step of comparing the queue with said read start threshold and outputting, in

accordance with a result of a comparison, a read command signal for reading out the

received packets (fig. 4, part 18 - compares queue length with current size of queue,

which results in either a read or a flush; col. 8, lines 57-68); (fig. 4, part 12 - counter for

counting the number of packets to be read out; col. 8, lines 26-35 - the read start

threshold is zero, applicant fails to disclose that the threshold could not be set at zero);

a read comparing circuit for determining whether or not the length of the queue has

reached said read start threshold, and outputting a read command signal in accordance

with a result of a decision; and (fig. 4, part 18 - compares queue length with current size

of queue, which results in either a read or a flush; col. 8, lines 57-68);

a fourth step of reading out the received packets in response to said read command

signal and either one of a read request signal requesting the received packet to be

decoded and a discard candidate read command signal output when the queue reaches

said discard start threshold (fig. 4, part 36; col. 8, lines 62-66 - otherwise the packets

are sent to the modem; col. 5, line 2).

However, Platel et al. is silent to disclosing a fifth step of selecting either one of

discarding and decoding of the received packets read out; a sixth step of discarding,

when the discarding is selected, at least one of the received packets from a head of the

queue while determining whether of not the length of the queue has reached said discard end threshold.

Weir, deceased et al. disclose a fifth step of selecting either one of discarding and decoding of the received packets read out; a sixth step of discarding, when the discarding is selected, at least one of the received packets from a head of the queue while determining whether of not the length of the queue has reached said discard end threshold (see col. 3, lines 28-35, any speed packet whose delay exceeded the standard delay is discard).

Both Platel and Weir disclose monitoring the communication packets. Weir, deceased et al. recoginizesa fifth step of selecting either one of discarding and decoding of the received packets read out; a sixth step of discarding, when the discarding is selected, at least one of the received packets from a head of the queue while determining whether of not the length of the queue has reached said discard end threshold. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Platel with the teaching of Weir to provide a fifth step of selecting either one of discarding and decoding of the received packets read out; a sixth step of discarding, when the discarding is selected, at least one of the received packets from a head of the queue while determining whether of not the length of the queue has reached said discard end threshold in order to improve the quality of speech packets.

However, the combined system (Platel and Weir) are silent to disclosing a read start threshold at which said received packets should being to be read out, a discard start threshold at which said received packets should begin to be discarded, and a

discard end threshold at which said received packets should end to be discarded with respect to a length of said queue.

Harrison et al. disclose a read start threshold at which said received packets should being to be read out, a discard start threshold at which said received packets should begin to be discarded, and a discard end threshold at which said received packets should end to be discarded with respect to a length of said queue (col. 10, lines 62-67, start discard, stop discard start threshold, During interval 8, some significant perturbation of the network causes a rapid increase in average forwarding delay in this queue to above threshold level 2 associated with critical congestion. The QoS process now suspends forwarding of filler traffic out of the queue and starts to discard new incoming packet flows that would normally flow into this queue. This leads to a reduction in average forwarding delay. The interface may remain congested, but the process stops discarding packets (interval 9). Finally, in interval 10, the interface is no longer congested (average forwarding delay has fallen below threshold level 1) and the process begins to promote filler traffic again to the respective queue).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a read start threshold at which said received packets should being to be read out, a discard start threshold at which said received packets should begin to be discarded, and a discard end threshold at which said received packets should end to be discarded with respect to a length of said queue taught by Harrison into the combined system (Platel and Weir). It would have motivate to do so to routinely discard packets from this type of traffic as a management strategy.

16.   In the claim 16, Harrison discloses wherein said read start threshold, said discard

start threshold and said discard end threshold are identical with each other (col. 10,

lines 62-67).

17.   In the claim 18, Harrison discloses before a new receipt of the communication

packet a dummy packet containing exclusive speed data is fed and stored (The packet

forwarding element is responsible for transferring traffic from the prioritized forwarding

queues out to the network, and via the latter to next routers/stations. In this process

packets are transferred preferentially from the highest priority non-empty queue, and

dummy packets allocated to service levels associated with individual queues is inserted

into the outbound traffic when forwarding rates from respective queues allows it; i.e.

while respective queues are operating below their thresholds of congestion. Dummy

packets have a form requiring network stations and routers receiving them to

immediately discard them).

18.   In the claim 19, Platel disclose the limitations of claim 15 above.

        However, Platel is silent to disclosing an eight step of discarding, when any one

of communication packets sequentially received via the network and monitored exceeds

a preselected allowable delay and /or is received in a inverse sequence, the one

communication packet and/or feeding a preselected error packet.

        Weir, deceased et al. disclose an eight step of discarding, when any one of

communication packets sequentially received via the network and monitored exceeds a

preselected allowable delay and /or is received in a inverse sequence, the one

communication packet and/or feeding a preselected error packet. (see col. 3, lines 25-35, lines 42-43, lines 46-47).

Both Platel and Weir disclose monitoring the communication packets. Weir, deceased et al. recognizes an eight step of discarding, when any one of communication packets sequentially received via the network and monitored exceeds a preselected allowable delay and /or is received in a inverse sequence, the one communication packet and/or feeding a preselected error packet.. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Platel with the teaching of Weir to provide an eight step of discarding, when any one of communication packets sequentially received via the network and monitored exceeds a preselected allowable delay and /or is received in a inverse sequence, the one communication packet and/or feeding a preselected error packet. in order to improve the quality of speech packets.

19.   In the claim 20, Weir discloses a step of assigning a particular receipt limit time representative of the preselected allowable delay to each communication packet, and determining whether or not each communication packet arrives before said receipt limit time assigned thereto expires; a step of monitoring a sequence of receipt of the communication packets on the basis of information contained in said communication packets; a step of monitoring the communication packets and discarding any one of said communication packets that has arrived after the receipt limit time assigned to thereto; and a step of feeding, when any one of the communication packets is discard or received in an inverse sequence, the error packet (col. 3, lines 27-35).

Claim Rejections - 35 USC § 103

20.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Platel – Weir - Harrison) in view of Fujimoto (4,769,844).

As to claim 17, the combined system (Platel – Weir - Harrison) discloses the limitations of claim 15 above.

However, the combined system (Platel – Weir - Harrison) are silent to disclosing in response to said candidate read command signal, the received packet read out as a candidate to be discard, and estimating, based on sound / soundless information contained in said packet designated and the queue and / or and influence of said packet on sound quality of sound to be reproduced in an auditory aspect, and discarding or decoding said packet in accordance with a result of an estimation.

Fujumoto et al. discloses in response to said candidate read command signal, the received packet read out as a candidate to be discard, and estimating, based on sound / soundless information contained in said packet designated and the queue and / or and influence of said packet on sound quality of sound to be reproduced in an auditory aspect, and discarding or decoding said packet in accordance with a result of an estimation (figure 4, col. 9, lines 65-67, In this embodiment, the same word is

pronounced more than once and the corresponding voice is input more than once.

Thus, there are produced a plurality of voice power signals which are averaged, for

example by superposition, to define an average voice power signal, which, in turn, is

stored in the reference pattern memory 17 if the conditions at units 15 and/or 16 are

satisfied. In the embodiment of FIG. 4, if the voice power signal has been found to have

no power dip or voiceless interval near the end thereof, then this incomplete voice

power pattern is discarded by the pattern check unit 16').

Thus, it would have been obvious to one of ordinary skill in the art at the time of

the invention to incorporate estimating the influence of said packet on sound quality,

and generating a switching signal for selecting either one of discard processing and

decode processing taught by Fujimoto into the combined system (Platel – Weir –

Harrision). One would have been to motivated to do so to allow to store reference data

at high accuracy.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-

3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

04/02/07

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